NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho (PIH) **REPORT FOR:** **MONTH:** May **YEAR:** 2017
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Travis Wyatt Service Hydrologist / Acting **DATE:** June 19, 2017
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

☐ **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

All of the area except Butte County and the extreme Western Central mountains saw below normal precipitation for the month. The five climate stations (Burley, Pocatello, Idaho Falls, Challis and Stanley) ranged from 0.50 inch of precipitation (1.00 below average) for Idaho Falls to 1.29 inches of precipitation (0.10 below average) for Burley. There were no precipitation records in the month of May for our 5 climate locations. The highest recorded monthly precipitation totals (non-SNOTEL and non-RAWS) were 1.60 and 1.52 inches at the Howe and Bellevue CO-OP stations. The highest recorded 24-hr precipitation (non-SNOTEL and non-RAWS) occurred at the Island Park, Aberdeen, and Bellevue CO-OP stations where 1.10, 0.90 and 0.82 respectively fell on the 18th, 27th and 26th. All basins were below normal ranging from 23 to 91 percent of normal. The basins receiving the greatest precipitation were the Big Wood above Hailey, Salmon above Salmon and the Big Lost receiving 96%, 91%, and 83% of average precipitation respectively for the month of May-based on SNOTEL data. The basins receiving the least precipitation were the Cub, Blackfoot, Henrys Fork, Snake River above American Falls and the Snake above Palisades receiving 23%, 37%, 42%, 44% and 44% of average precipitation respectively for the month of May-based on SNOTEL data.

Mean average temperatures ranged from 43.5 degrees F (2.6 degrees above normal) for Stanley to 58 degrees F (1.5 degrees above normal) for Shoshone across the HSA. The Central Mountains and the Upper Snake Highlands had temperatures 0 to 3 degrees above normal with rest of the area near normal to slightly below normal. The five climate stations ranged from -0.1 below normal for Pocatello to 2.6 above normal for Stanley. There were no temperature records in the month of May for our 5 climate locations. Of the data available for the month, the stations (non-SNOTEL and non-RAWS) within the HSA reaching the highest 24-hour temperatures were Shoshone and Pocatello COOP stations reaching 94°F and 90°F respectively both on the 31st. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature were the Chilly Barton Flat and Stanley COOP stations at 19°F and 21°F respectively on the 14th and 3rd respectively.

For the month of May, rivers saw increases/peaks after a strong warm up the first week of the month. The rivers started to increase again by the end of the month as temperatures rose to the highest values of the month. The Portneuf River in Pocatello remained in minor to moderate flood stage most of the month, with only minor to moderate field/park flooding reported. The Bear River remained high staying in minor flood stage most of the month as well. Mostly minor to moderate field flooding as well as minor road flooding was reported. With well above normal temperatures early in the month melting a record snowpack, the Big Wood River either recorded

near record or record peaks at all river gages along the Big Wood above Bellevue causing significant flooding for the Sun Valley area from Ketchum to Bellevue. The Warm Springs gage recorded a record peak of 13.68 on May 7. The previous record was 11.8 feet on April 27th in 2012. Multiple evacuations of homes occurred, particularly in the Hailey and Warm Springs areas. There were also multiple roads and a few bridges as well as some utilities closed with extensive damage. Cooler temperatures back off flows by mid-month, but the flows remained elevated. Flows increased again at the end of the month in response to warmer temperatures. The Salmon River in Salmon reached moderate flood stage at the beginning and end of the month in response to the two big warm-ups. This high flow caused minor flooding from the headwaters of the Salmon through Challis in Custer County. Most small streams and tributaries in the Central mountains and Big Lost River range including Trail Creek, Valley Creek, Garden Creek and Antelope creek overflowed their banks. An Areal flood warning was in effect most of the month. Multiple backcountry roads and campgrounds were flooded and damaged in the Central Mountains and Big Lost River range.

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the Eastern Idaho forecast is for equal chances for above and below normal temperatures. For the 8 to 14 day outlook for precipitation, there is a 33 to 40 percent chance for below normal precipitation. The one-month forecast graphics are below. For the three-month outlook, the temperature forecast is a 33 to 40 percent chance to be above normal. As for three-month outlook for precipitation, the outlook is equal chances for above or below normal.

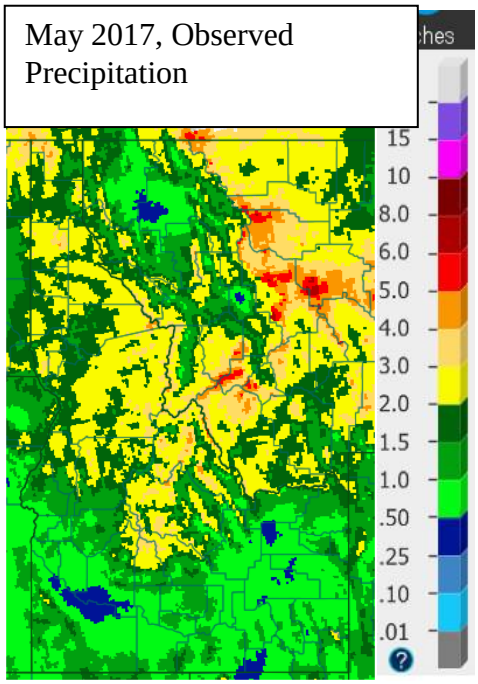
Reservoirs last month overall decreased storage in the Upper Snake River basin system and are currently sitting at 94% of capacity overall for capacity in the Upper Snake River system. Compared to last year at this time, it was about 84% of capacity. As of June 16, 2017, Milner, Palisades, Lake Walcott, and Jackson have the lowest percent of average capacity at 70%, 85%, 87% and 93% of average respectively. All other reservoirs are near 100% capacity.

Current streamflow conditions in Eastern Idaho are normal to above normal for the Henrys Fork and Lower Snake River basins and much above normal for the Central mountains, Big Lost, Bear Lake, Teton and Upper Snake River basins (see USGS streamflow graphic below).

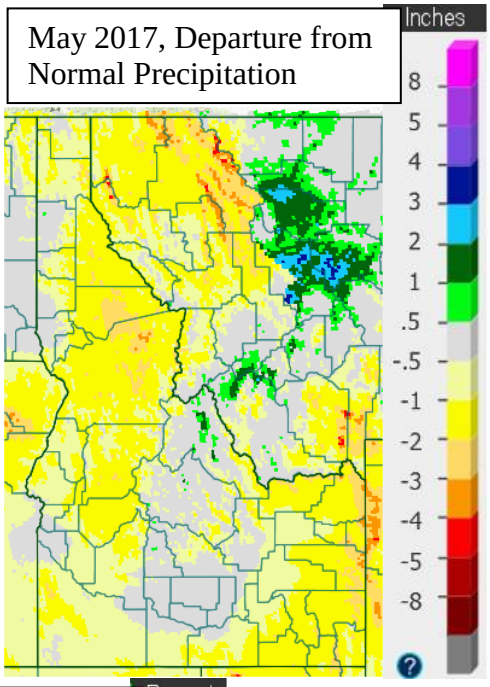
Drought conditions across eastern Idaho continue to be 0 percent in May as reflected on the latest U.S. Drought Monitor. The latest update of the U.S. Seasonal Drought Outlook shows no change for the eastern Idaho's drought outlook forecast.

Precipitation:

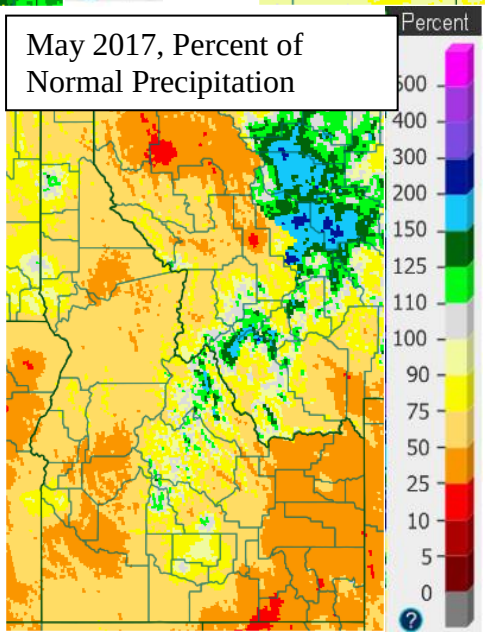
May 2017, Observed Precipitation



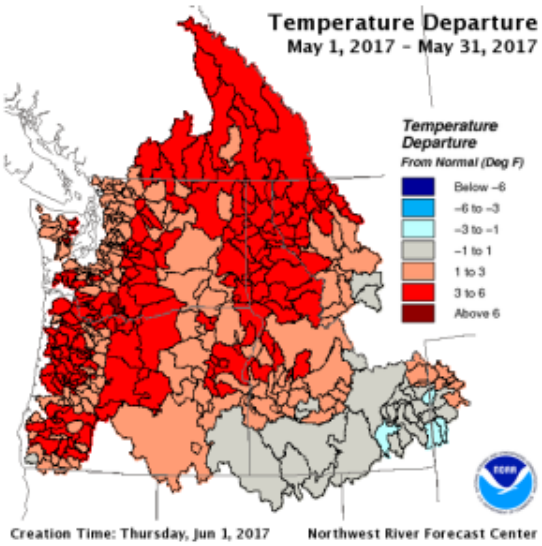
May 2017, Departure from Normal Precipitation



May 2017, Percent of Normal Precipitation



www.water.weather.gov/precip/#



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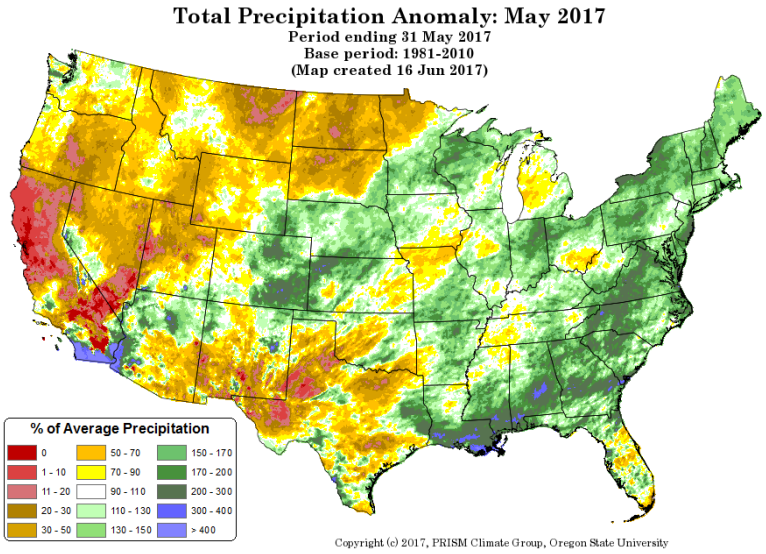
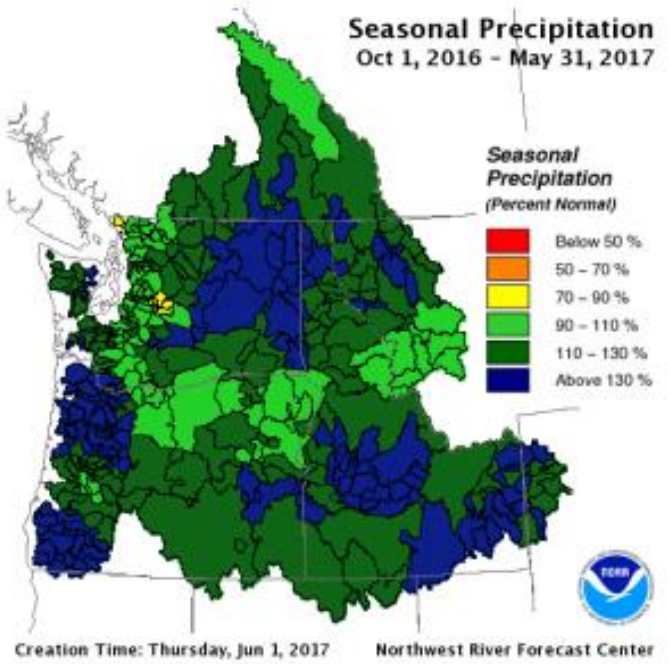


http://prism.oregonstate.edu/comparisons/anomalies.php



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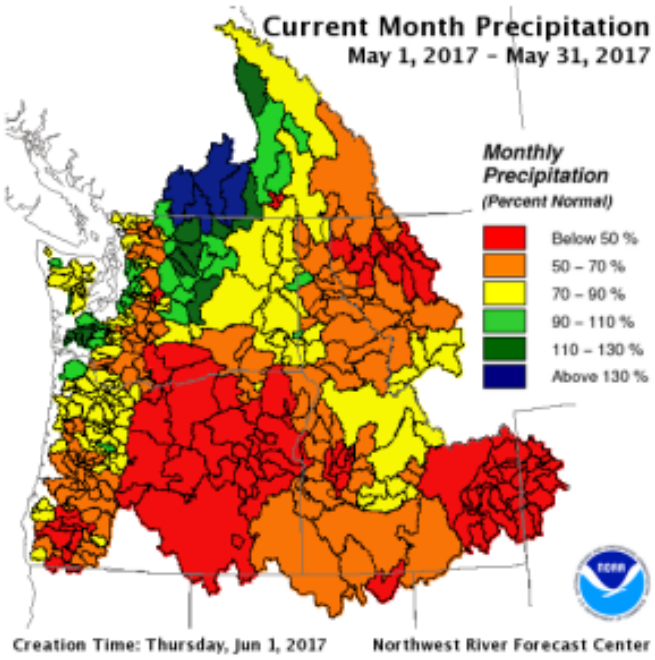

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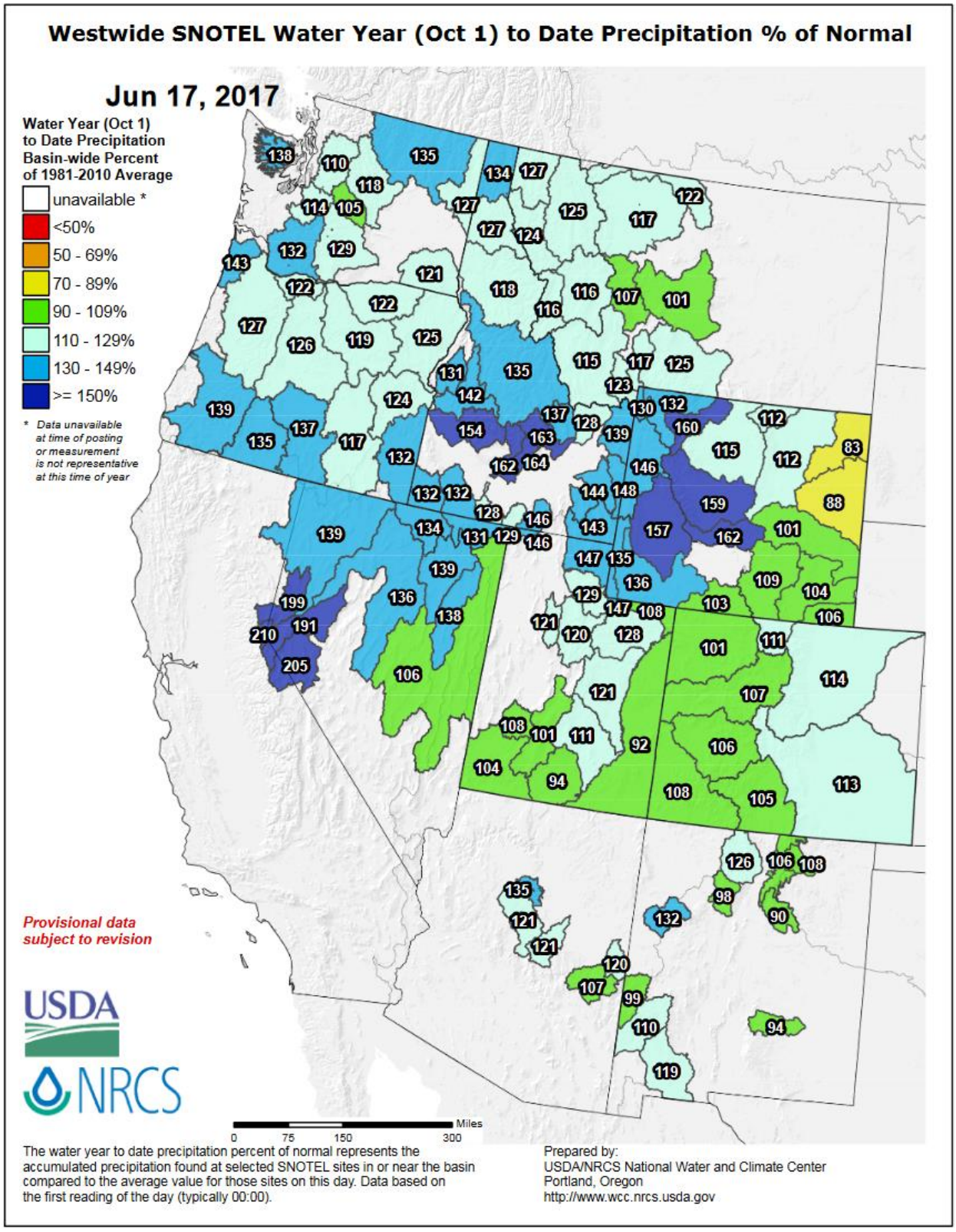
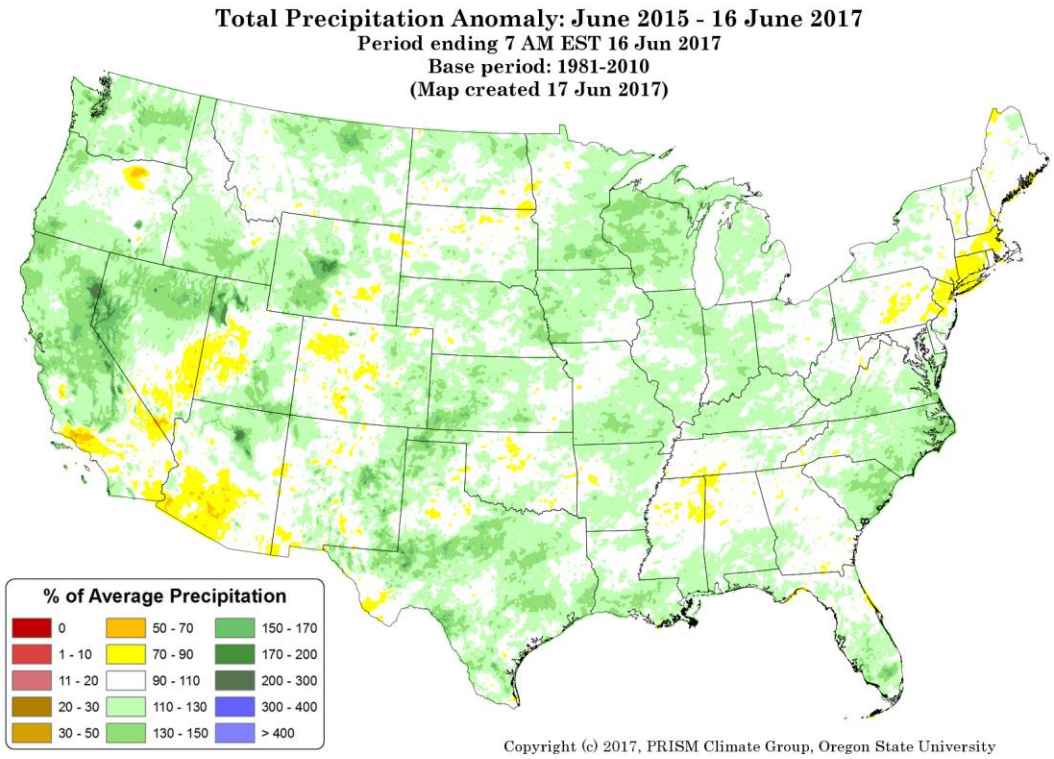
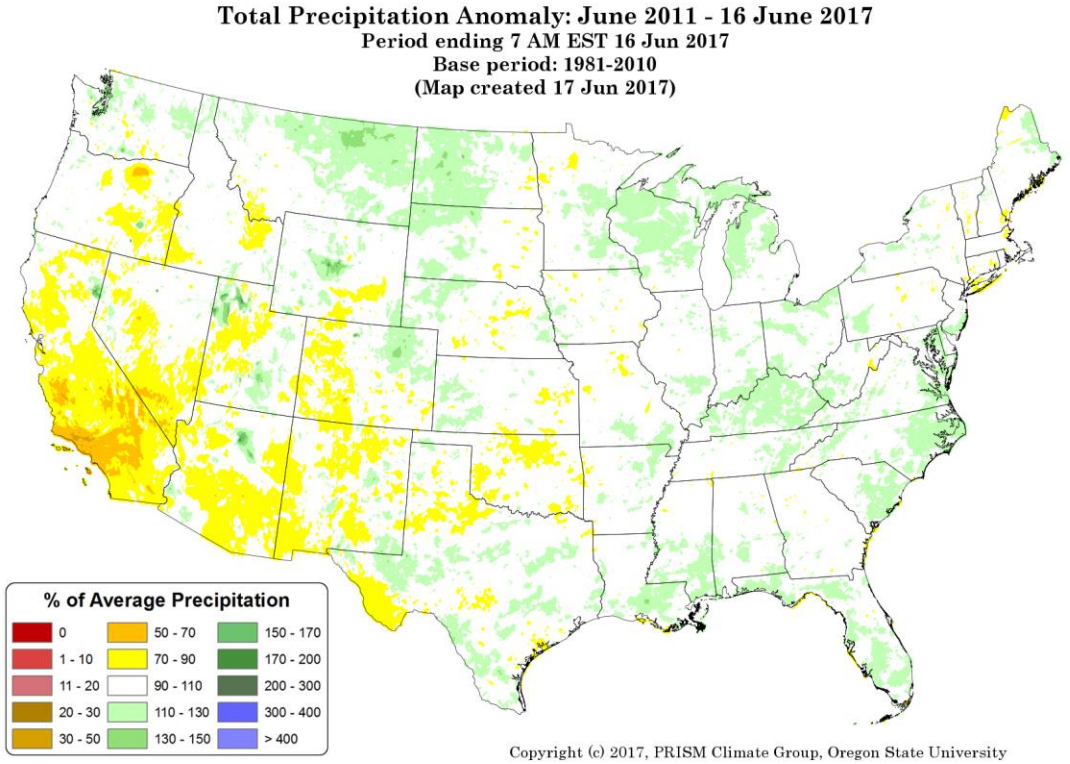


http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpctnormal_update.pdf

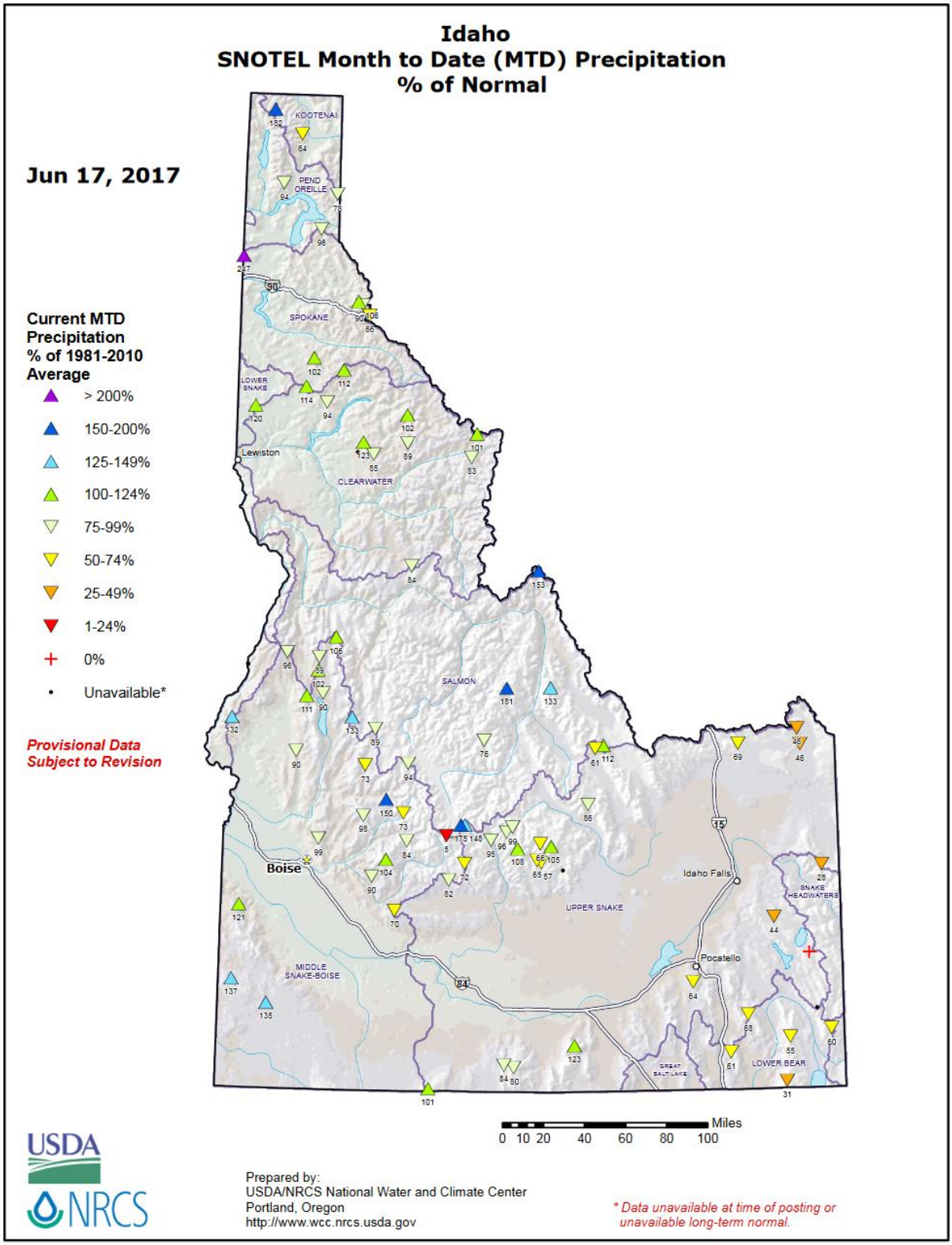
Past 2 Years of Precipitation % of Average:



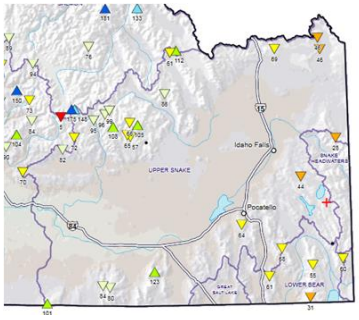
Past 6 Years of Precipitation % of Average:



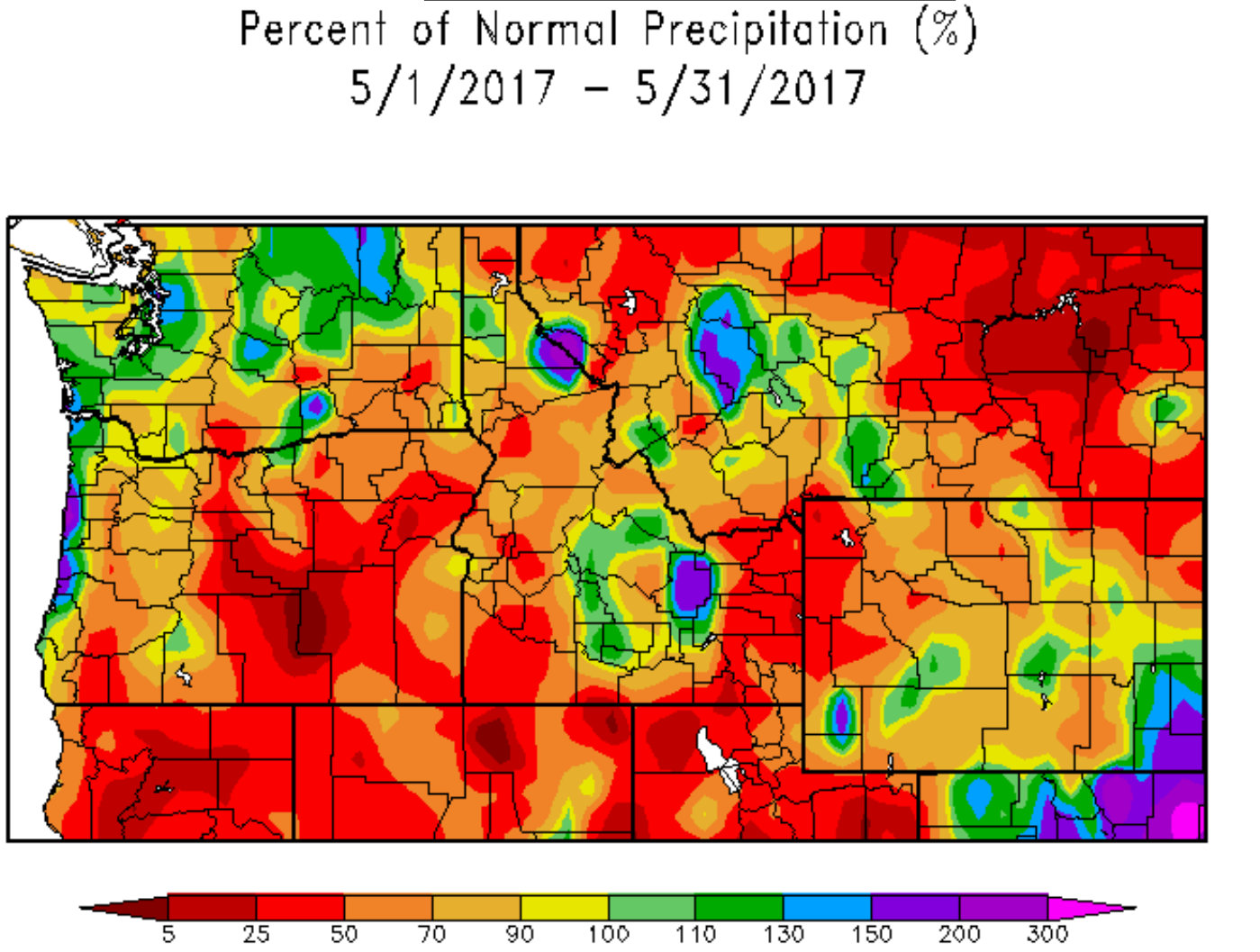
www.prism.oregonstate.edu/comparisons/drought.php



http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecpctnormal.pdf

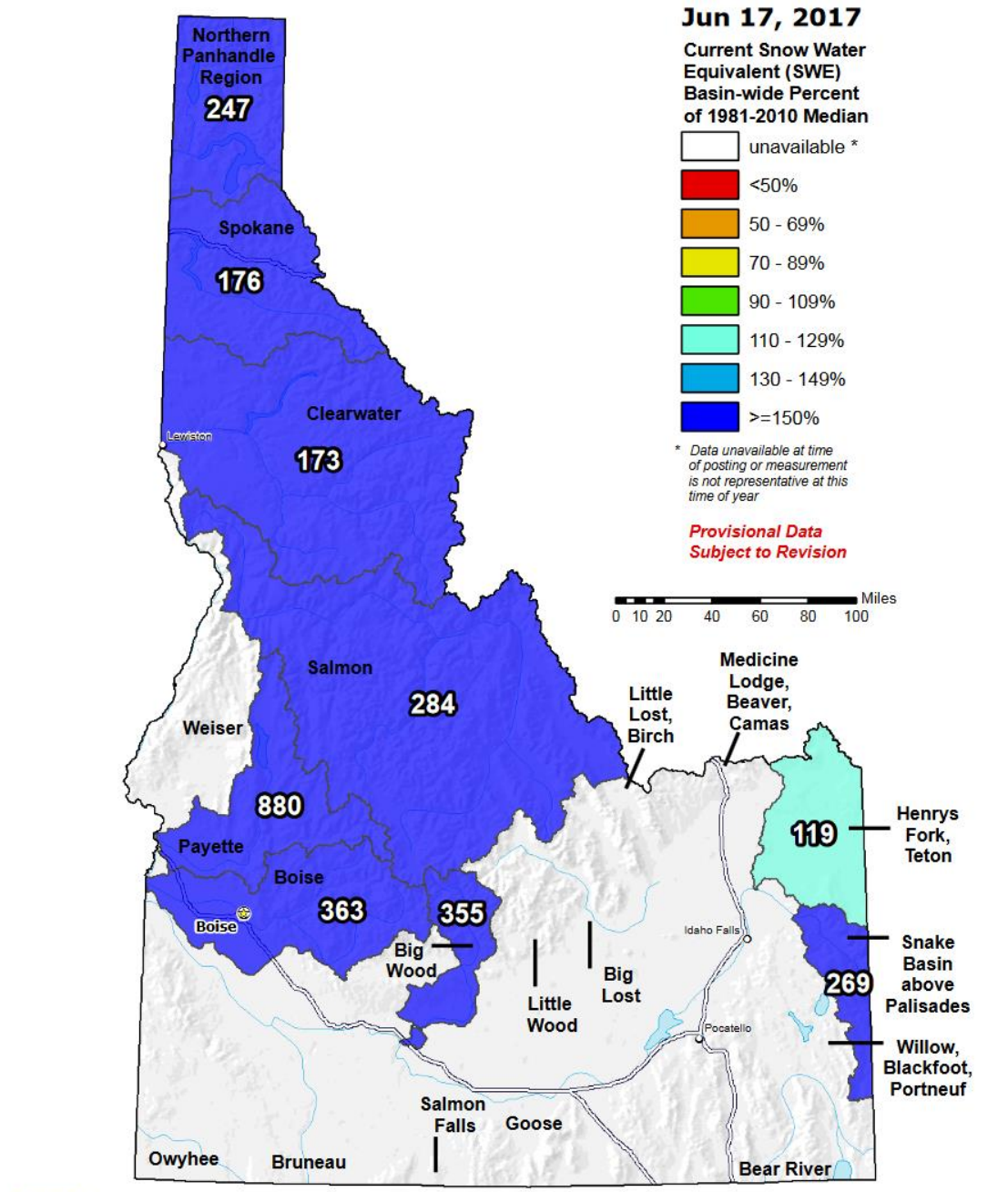


SNOTEL MTD % of Normal Precipitation for middle of May 2017
(image is cropped from above image)



Our Southern and Eastern areas received 25 to 70 percent of normal precipitation. The Central mountains received 70 to 110 percent of normal. Only Butte county received well above nomal precipitation, receiving 110 to 200 percent of normal.

Idaho SNOTEL Current Snow Water Equivalent (SWE) % of Normal

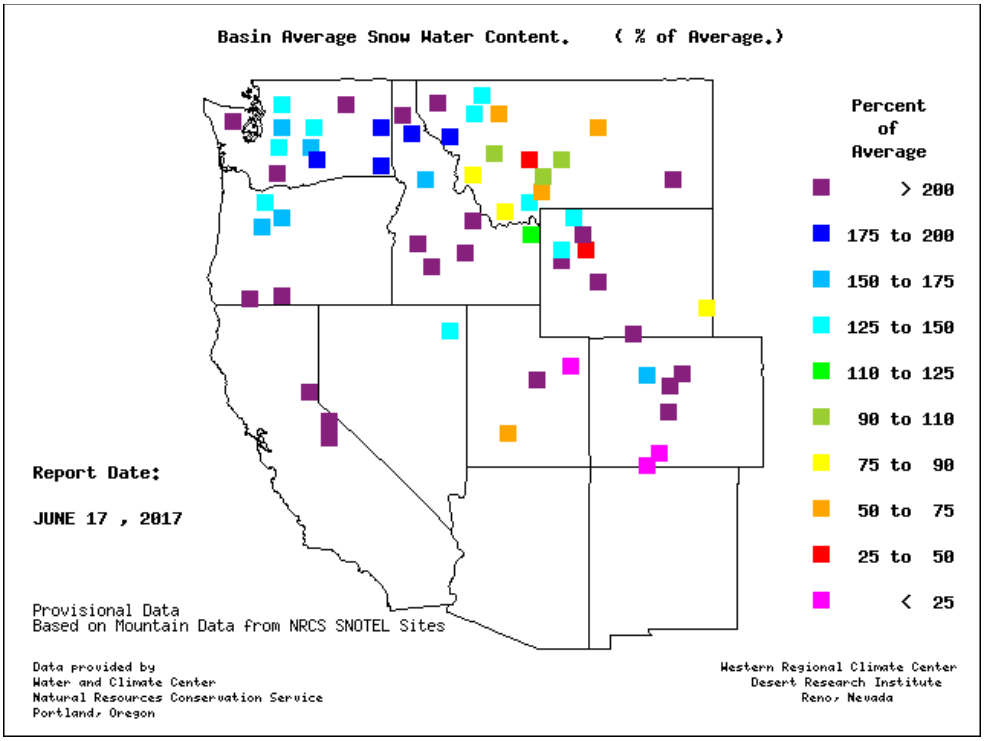


USDA NRCS

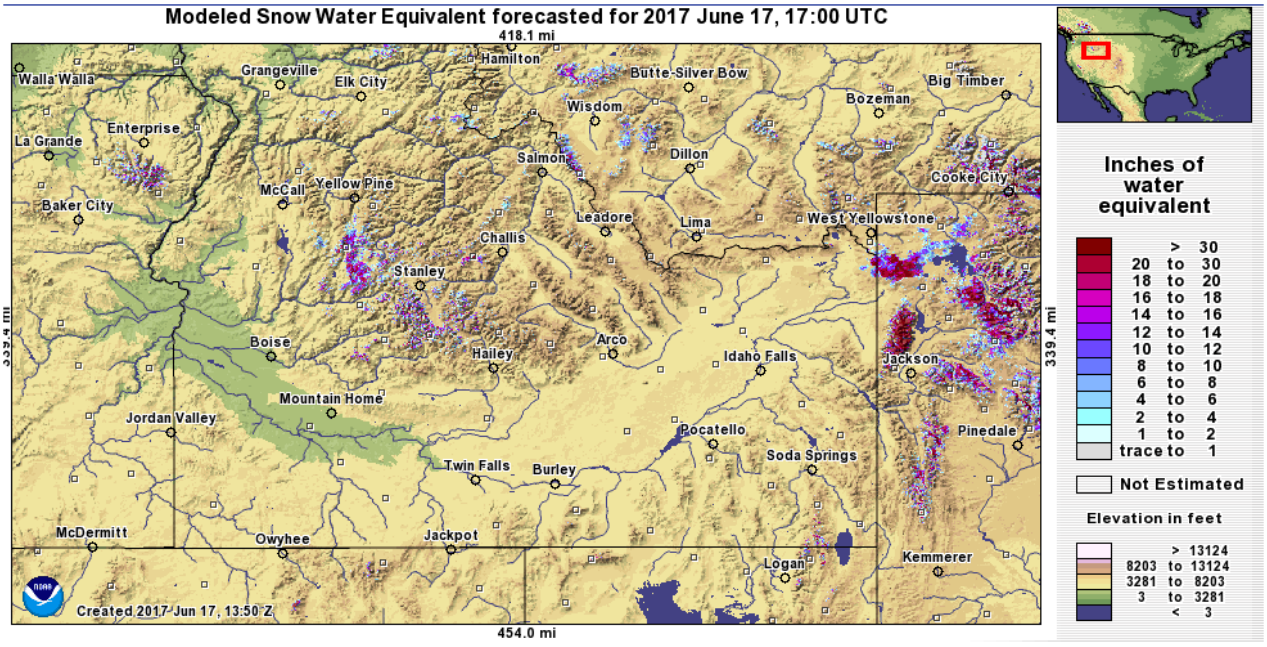
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_swepctnormal_update.pdf



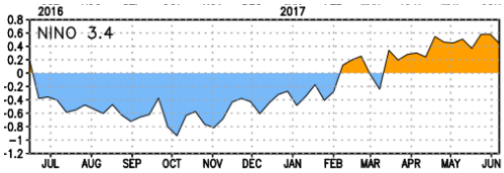
www.wrcc.dri.edu/snotelanom/basinswe.html



www.nohrsc.noaa.gov/interactive/html/map.html

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ 0.4 Deg C



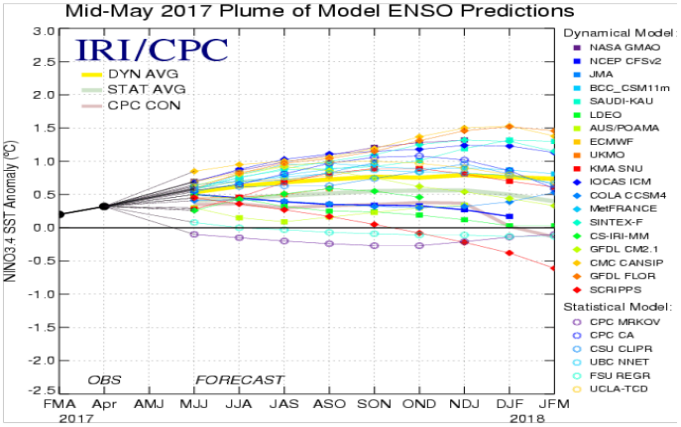


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 16 May 2017).

www.cpc.ncep.noaa.gov, **iri.columbia.edu/climate/ENSO**

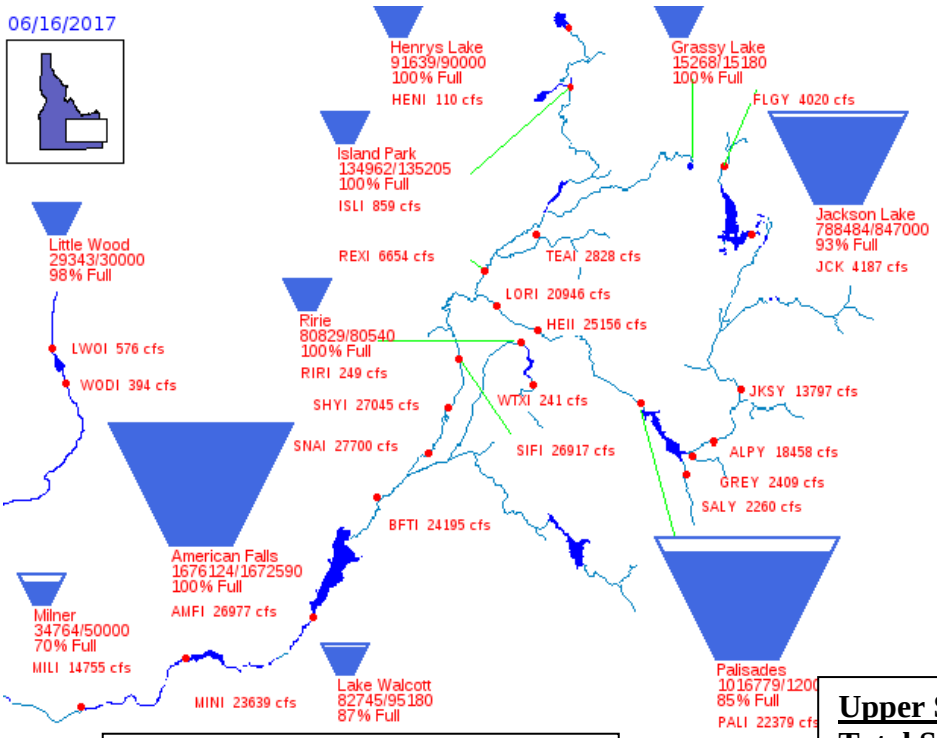
CPC Synopsis: ENSO-neutral conditions are present. ENSO-neutral is favored (50 to ~55% chance) through the Northern Hemisphere summer and fall 2017.

Note: Equatorial sea surface (SSTs) are near-to-above average across most of the Pacific Ocean. Over the past week the RMM index suggested a weakness of the MJO, while the CPC velocity potential-based index tracked a signal across the Western Hemisphere tied to a Kelvin wave. Kelvin and Rossby wave activity are likely to drive the outlook over the coming two weeks, with the dynamical model forecasts suggesting emergence of the MJO being discounted due to signals apparently tided to the ongoing Kelvin wave rather than an emerging MJO envelope. The Pacific Decadal Oscillation (PDO) remains slightly positive, decreasing slightly.

Reservoirs:

Reservoir	% Capacity April 30[1]	% Capacity May 31[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	55	80	25	111	131
Palisades	24	59	35	80	116
Henrys Lake	98	97	-1	103	104
Island Park	95	100	5	101	101
Grassy Lake	88	98	10	104	107
Ririe	93	101	8	116	115
Blackfoot	94	94	0	135	116
American Falls	96	98	2	113	94
Mackay	37	58	21	74	121
Little Wood	49	87	38	96	109
Magic	95	98	3	145	138
Oakley	75	80	5	162	89
Bear Lake	68	83	15	152	89
Lake Walcott	95[3]	87[4]	-8	n/a	n/a
Milner	69[3]	70[4]	1	n/a	n/a

Source: (1) NRCS April 30, 2017; (2) NRCS May 31, 2017.
(3) US Bureau of Reclamation (BOR) May 15, 2017 (4) BOR June 16, 2017

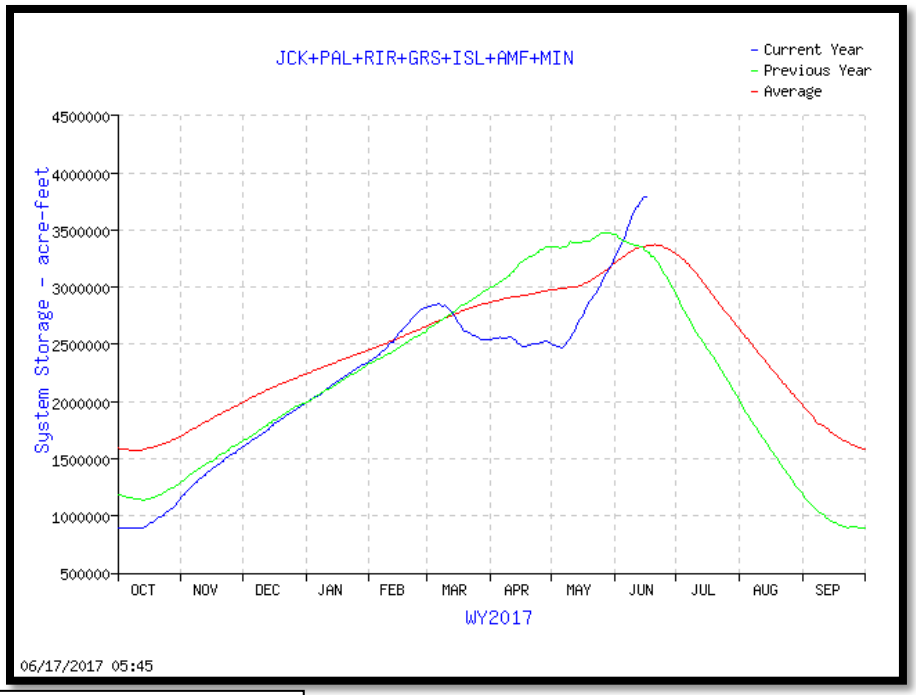


www.usbr.gov/pn/hydromet/burtea.html

94% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

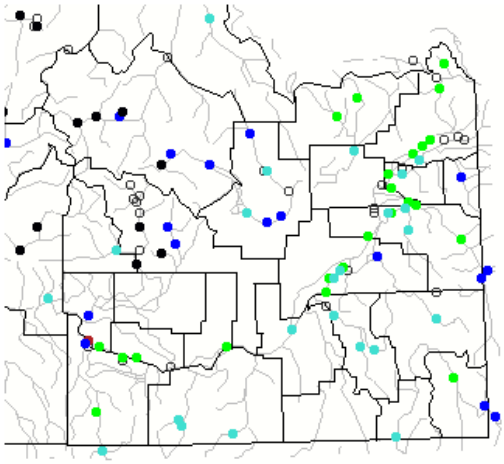
Upper Snake River:
Total Space Available: 250,505 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



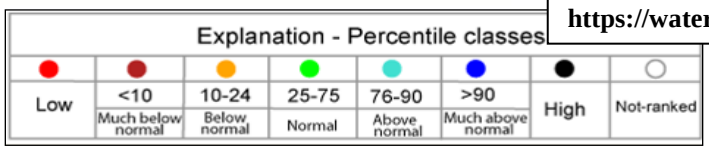
https://www.usbr.gov/pn-bin/graphwy.pl?snasys_af

Streamflow:



Monthly average streamflow compared to historical average streamflow for May 2017.

USGS



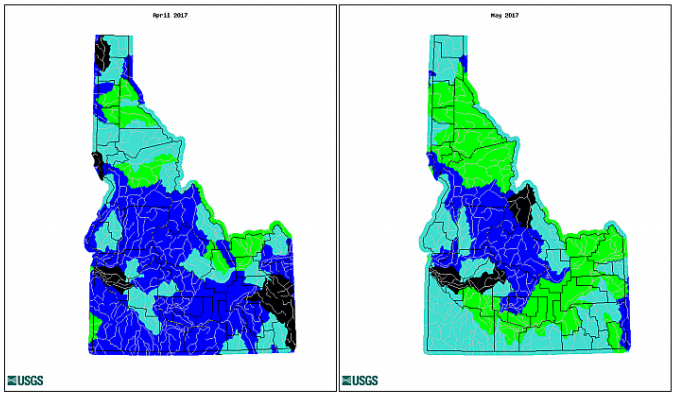
https://waterwatch.usgs.gov/index.php?r=id&id=mv01d

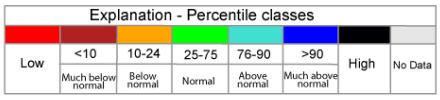
Comparison of Streamflow Maps

Geographic area: Idaho | Water resource region: | GO

Map type: Monthly Streamflow (month of year) | Sub type: HUC Streamflow Map

Date (YYYYMM): 201704 Date (YYYYMM): 201705

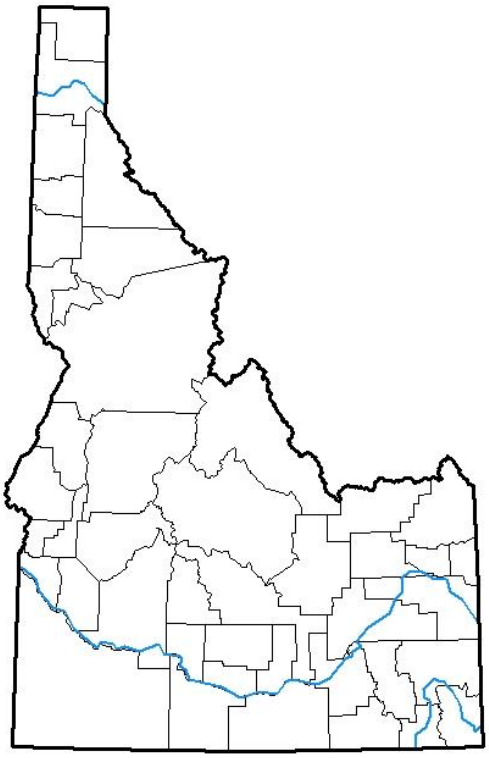




http://waterwatch.usgs.gov/index.php?id=wwchart_map2

Drought:

U.S. Drought Monitor
Idaho



June 13, 2017
(Released Thursday, Jun. 15, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week *06-06-2017*	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago *03-14-2017*	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year *01-03-2017*	89.98	10.02	0.04	0.00	0.00	0.00
Start of Water Year *09-27-2016*	6.14	93.86	8.89	0.00	0.00	0.00
One Year Ago *06-14-2016*	80.23	19.77	0.30	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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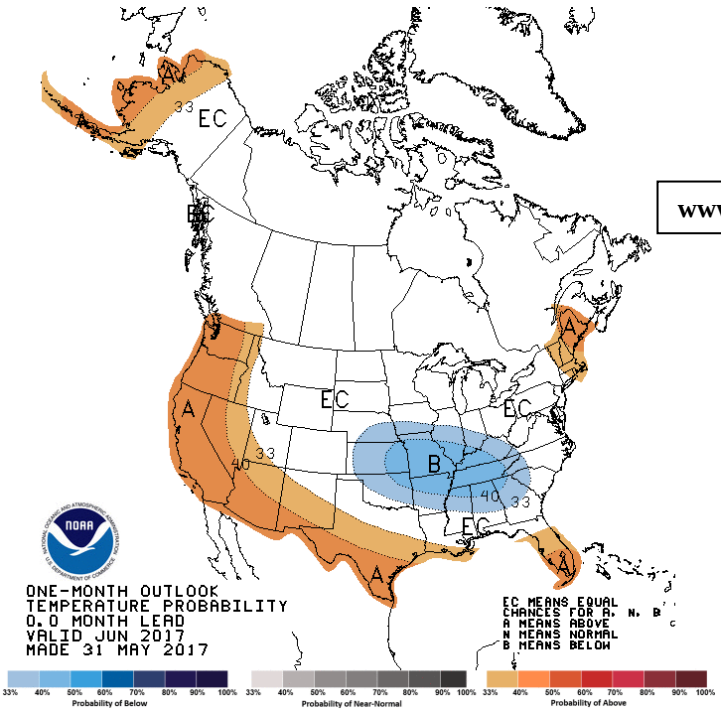
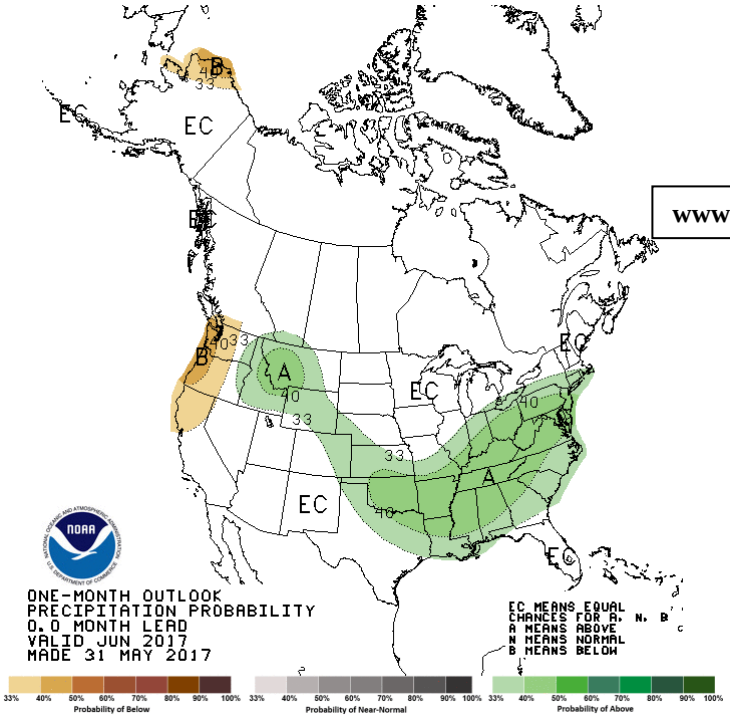
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/



www.cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



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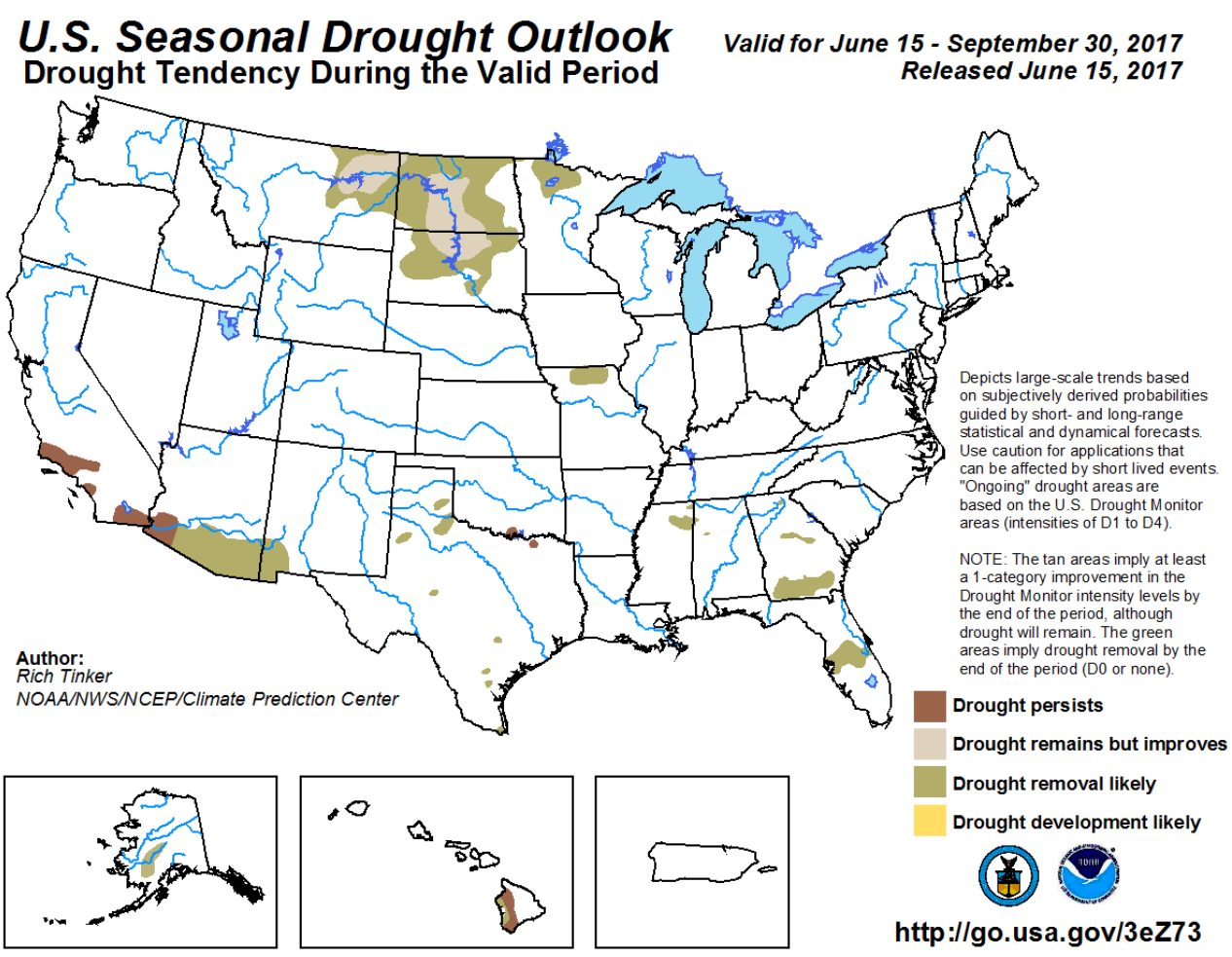

www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

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PIH Mets/HMT (pih.ops)

End

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